

U.S. Patent Application No. 09/630,121  
Amendment After Final dated March 19, 2004  
Reply to final Office Action dated October 20, 2003

### REMARKS/ARGUMENTS

Reconsideration and continued examination of the above-identified application are respectfully requested.

The amendment to the claims, including new claim 54 is editorial in nature or further defines what the applicants regard as the invention. Full support for the amendment can be found throughout the present application, for instance, at page 5, line 11; page 7, lines 20-25; page 8, lines 20-25; page 10, lines 5-15; page 16, lines 1 and 2; and page 22, line 17. No new questions of patentability should arise nor does the amendment necessitate any further searching on the part of the Examiner since the Examiner has essentially considered similar subject matter. The new claim is also a dependent claim. The amendment places the application in condition for allowance. At a minimum, the amendment places the application in a better condition for appeal. Accordingly, no questions of new matter should arise and entry of this amendment is respectfully requested.

Claims 7-21, 31-33, 37-40, and 42-54 are pending in the application. Claims 1-6, 22-30, and 34-36 have been canceled previously and claim 41 has been canceled by way of this amendment.

At page 2 of the Office Action, the Examiner rejects claims 7-21, 31-33, and 37-53 under 35 U.S.C. §103(a) as being unpatentable over Nelson (U.S. Patent No. 6,324,809 B1) in view of Nishibori (U.S. Patent No. 5,869,138) and further in view of Andres (U.S. Patent No. 5,553,427). The Examiner, for the most part, provides the same reasoning for rejecting claims 7-21, 31-33, and 37-53 as in the previous Office Action dated April 29, 2003.

In summary, the Examiner asserts that Nishibori '138, in the abstract and Figure 1, illustrates printing a wood grain pattern on a core with a clear protective top coat, wherein the core contains a thermoplastic resin. The product is used as a wood board substitute flooring. The

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Examiner then repeats his argument with respect to Andres and Nelson from the Office Action dated April 29, 2003. The Examiner then asserts that it would have been obvious to one of ordinary skill in the art to print directly on the plank of Nelson instead of using a printed overlay in order to save the expense of construction of the overlay and provide a realistic wood grain pattern. The Examiner also asserts that it would have been obvious to use cavities and feet in the planks of Nelson in view of Nishibori '138 in order to lower the weight and the amount of material used in the core and to raise the planks off of the subfloor. Furthermore, the Examiner asserts that Nelson appears, both explicitly and implicitly, to teach rectangular planks with no cupping. Therefore, the Examiner takes the planks of Nelson as modified by Nishibori '138 to be equivalent to the planks of the claimed invention. The Examiner also takes the background colorant layer of Nishibori '138 as being part of the final printed pattern. Therefore, the Examiner concludes that the planks of Nelson as modified by Nishibori '138 are equivalent to the planks of the claimed invention.

At page 6 of the Office Action, the Examiner responds to the applicants' arguments dated July 29, 2003. The Examiner argues that Nishibori '138 can contain up to 80% thermoplastic material with only 20% cellulose material. The Examiner then states that the specification of the present application describes the use of fillers, including wood flours and cellulosic powders, at up to 30% by weight of the final thermoplastic product. Thus, the Examiner states that little difference exists between Nishibori '138 and the claimed invention. Furthermore, the Examiner states that even if an amount larger than 80% thermoplastic is used, Nishibori '138 merely describes that the printed appearance will be poor; however, the composite can be printed.

With respect to the applicants' arguments that Nelson requires bottom and top laminated layers, the Examiner states that Nelson, at column 2, lines 50-56, describes that the top and bottom

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surfaces of the laminate can be selected from the exposed surfaces of the core or from decorative laminate layers. The Examiner also states that Nelson can be installed without glue, which allows a floating floor installation.

With respect to the applicants' remarks that the extrusion of Andres is fixed to a subfloor and is not a floating surface, the Examiner states that Andres is relied upon to show the use of feet and cavities to lighten the weight of the plank, and Nelson to show the method of joining planks to each other and for mounting the structure on the subfloor.

With respect to the applicants' arguments that the absence of heat treating implies cupping in Nelson and Nishibori '138, the Examiner states that no evidence of record exists that this is the case, other than attorney argument. Thus, the Examiner concludes that absent evidence of cupping, the Examiner assumes no cupping occurs in the cited references. For the following reasons, this rejection is respectfully traversed.

Claim 31 recites a thermoplastic plank having a core comprising at least one thermoplastic material, a digital printed design directly on the top surface of the plank, and at least one protective coating on top of the digital printed design. Claim 47 recites a floor covering forming a floating surface, wherein the floor covering has a plurality of thermoplastic planks, and each thermoplastic plank has a core comprising at least one thermoplastic material, a digital printed design on the top surface of the core, and a protective layer affixed to the top surface of the digital printed design. Claim 51 recites a plank as in claim 31, and further recites that no backing layer is located adjacent to the bottom surface of the core. Claim 53 recites a plank as in claim 31, and further recites that at least the bottom surface of the core is thermally treated.

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Nelson relates to a core for use in laminate floorings, which does not include a digital printed design on the top surface of the core, as recited in claims 31, 47, 51, and 53 of the present application. Nelson requires a laminate on the top and on the bottom of the core. Nelson also describes the use of a decorative laminate on top of a core. Nelson does not teach or suggest a protective layer affixed to the top surface of the printed layer and, more specifically, does not teach or suggest a digital printed layer that is printed on the top surface of the core.

It is important for the Examiner to appreciate that a laminate on the top or the bottom of the core is not the same or equivalent to having a digital printed design on the top surface of the core.

Furthermore, contrary to the Examiner's assertions, a backing layer adjacent to the bottom surface of the core exists in Nelson. Nelson is directed to an article for use as a surface covering, wherein the article has a central core and a decorative layer on both the upper and lower surfaces of the core. The teachings of a reference must be considered as a whole. Nelson describes and exemplifies in the specification and figures the use of two decorative layers, one on the top and one on the bottom of the core. Thus, Nelson as a whole requires the use of two decorative layers. The claims of Nelson even show the necessity of having a surfacing material on both the upper surface and the lower surface and claims 2, 3, 5, and 6 of Nelson essentially explain the language set forth in Nelson, at column 2, lines 51-65. It is clear that the upper and lower decorative layers must be present, and they can be the same or different. The figures of Nelson further show the necessity of having an upper planar decorative surface and a lower decorative surface. Each of the figures shows these decorative surfaces. Even the abstract of Nelson shows the necessity of having the upper planar decorative surface and a lower planar surface. Clearly, one skilled in the art, when reading Nelson would find only a teaching and only a suggestion of a surface covering

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with a decorative surface located on both the upper surface and the lower surface of the central core. No other options are taught or suggested in Nelson. The language specifically relied upon by the Examiner merely states that the upper surface and lower surface can have different decorative layers or the same decorative layers, but there is no language in column 2 that states that the decorative surface on the lower surface of the central core is optional. It is clearly mandatory in all embodiments of Nelson. Moreover, the decorative surface of Nelson is not a digital printed design.

Additionally, it is well known to one of ordinary skill in the art to place a backing layer on a core to reduce curl and/or warping of a product such as a plank. It is also well known in the art that products made without a backing layer on the bottom layer surface of the core demonstrate an unacceptable curl or warp. See U.S. Patent Nos. 6,589,379; 6,460,306; and 6,103,044. Thus, one of ordinary skill in the art would understand Nelson as showing the need to use a backing layer to reduce curl or warp, as known in the art. Moreover, Nelson does not teach or suggest thermal treatment of the core. Contrary to the Examiner's assertions, Nelson does not implicitly or explicitly state that no cupping of the planks described therein occurs. Furthermore, it is a known fact that some amount of cupping occurs, particularly at low humidity, when a flooring product does not have a backing. Therefore, the burden is on the Examiner to show where or how Nelson teaches an absence of cupping.

Nishibori '138 relates to a method for forming a pattern on a synthetic wood board. It is important for the Examiner to appreciate that the cores of Nelson and Nishibori '138 are different from one another. The Examiner cannot simply substitute different cores and expect the same outcome. According to columns 7 and 8 of Nishibori '138, wooden grain patterns are directly

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printed by role print or flexographic printing on the surface on which a blurred wooden grain pattern is formed by the sanding process. Furthermore, according to column 8, lines 20-25, a transparent paint, such as clear lacquer or matting agent, is coated on the printing surface of the wooden grain pattern on the synthetic wood board and dried to be finished. According to Nishibori '138, the finishing coat can be aminoalukid, lacquer, polyester, polyurethane, or the like. Nelson does not provide any option to remove the laminate layer and one cannot simply substitute Nishibori '138 for Nelson's layer. The two structures are different. Even if one skilled in the art would substitute the laminated core of Nelson with the role print or flexographic printing of Nishibori '138, at best, the combination of the two references would produce wood grain patterns printed by role print or flexographic printing on both the upper surface and the lower surface of the central core. The combination of Nelson and Nishibori '138 still would not teach or suggest a digital printed design on the top surface of the core as recited in claims 31, 37, 51, and 53 of the present application. Digital printing is quite different from role or flexographic printing. Digital printing is non-contacting and more detailed.

Andres relates to a siding with a completely different design. Andres is directed to a plastic extrusion that does not have a base layer. Also, Andres is not directed to forming a decorative print on a surface. Furthermore, the extrusion of Andres is fixed to a subfloor and is not a floating surface as set forth in claim 47 of the present application. Additionally, Andres does not cure the deficiencies of Nelson or Nishibori '138 with regard to thermal treatment of the core or a digital printed design directly on the top surface of the plank. Thus, Nelson in view of Nishibori '138 and further in view of Andres does not teach or suggest the subject matter of claims 31, 47, 51, 53, and claims dependent therefrom. Accordingly, the rejection under 35 U.S.C. §103(a) over Nelson in

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view of Nishibori '138 and further in view of Andres should be withdrawn.

At page 4 of the Office Action, the Examiner rejects claims 31, 47, 51, and 53 under 35 U.S.C. §102(a) and (e) as being anticipated by Nishibori '138. The Examiner, for the most part, provides the same reasoning for rejecting claims 31, 47, 51, and 53 as in the previous Office Action dated April 29, 2003. In summary, the Examiner asserts that Nishibori '138 shows a plank made of a thermoplastic resin with a printed pattern on the core and a top coat on the printed pattern. The Examiner takes the colorant coating as being part of the printed pattern design since the color forms a visible part of the wood grain pattern and therefore the printed pattern design is taken as being on the top surface of the core. The Examiner also asserts that Nishibori '138 shows boards with no type of cupping. The Examiner therefore considers the boards of Nishibori '138 to be equivalent to the heat treated planks of the claimed invention. Furthermore, according to the Examiner, Nishibori '138 does not teach or suggest a backing layer on the bottom of the core. For the following reasons, this rejection is respectfully traversed.

With respect to claim 53, the wood board of Nishibori '138 is not thermally treated. With respect to the other rejected claims, Nishibori '138 does not teach or suggest a digital printed design directly on the top surface of the plank. The arguments set forth above regarding Nishibori '138 apply equally here. Accordingly, the rejection should be withdrawn.

At page 5 of the Office Action, the Examiner rejects claim 53 under 35 U.S.C. §103(a) as being unpatentable over Nishibori '138 in view of Nishibori '900 (U.S. Patent No. 4,610,900). According to the Examiner, Nishibori '138 shows a printed pattern on a thermoplastic core. The Examiner then asserts that Nishibori '900 shows thermal treatment of a thermoplastic core after molding in order to resist deformation of the core over time. The Examiner then concludes that

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since Nishibori '900 shows that heat treated thermoplastic boards reduce deformation, it would have been obvious to one of ordinary skill in the art to heat treat the board of Nishibori '138 in order to reduce deformation over time. For the following reasons, this rejection is respectfully traversed.

Claim 53 of the present application relates to a thermoplastic plank including a core having at least one thermoplastic material, wherein the core has a top surface, a bottom surface, and opposing sides; a digital printed design on the top surface of the core, wherein the digital printed design has a top surface and a bottom surface; and a protective layer affixed to the top surface of the digital printed design, wherein at least the bottom surface of the core is thermally treated.

As stated above, Nishibori '138 does not teach or suggest a digital printed design on the top surface of the core. Similarly, Nishibori '900 does not teach or suggest a digital printed design on the top surface of the core. Also, Nishibori '900 relates to a method of eliminating the residual stress by subjecting the molded products containing cellulose-base aggregate, especially the resinous skin layer thereof, to re-heating, curling, and sanding or jetting treatments under predetermined conditions. Nishibori '900 does not teach or suggest a protective layer located on the top surface of a digital printed design. In fact, Nishibori '900 does not teach or suggest a digital printed design at all. Therefore, one skilled in the art, by reading Nishibori '138 in view of Nishibori '900, would, at best, heat the synthetic wood board without the application of a digital printed design pattern on the synthetic wood board. Accordingly, the rejection under 35 U.S.C. §103(a) over Nishibori '138 in view of Nishibori '900 should be withdrawn.




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**CONCLUSION**

In view of the foregoing remarks, the applicants respectfully request the reconsideration of this application and the timely allowance of the pending claims.

If there are any other fees due in connection with the filing of this response, please charge the fees to Deposit Account No. 50-0925. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,

  
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